

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
18 December 2003 (18.12.2003)

PCT

(10) International Publication Number
WO 2003/103378 A3

(51) International Patent Classification⁷: C12N 15/00, A01K 67/027

(21) International Application Number:
PCT/US2003/018393

(22) International Filing Date: 11 June 2003 (11.06.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/387,678 11 June 2002 (11.06.2002) US

(71) Applicant (*for all designated States except US*): THE REGENTS OF THE UNIVERSITY OF CALIFORNIA [US/US]; 1111 Franklin Street, 12th floor, Oakland, CA 94607 (US).

(72) Inventor; and

(75) Inventor/Applicant (*for US only*): LIN, Shuo [US/US]; 10219 Clematis Court, Los Angeles, CA 90077 (US).

(74) Agent: WOOD, William, J.; Gates & Cooper LLP, 6701 Center Drive West, Suite 1050, Los Angeles, CA 90045 (US).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:

— *of inventorship (Rule 4.17(iv)) for US only*

Published:

— *with international search report*

(88) Date of publication of the international search report:
15 April 2004

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

WO 2003/103378 A3

(54) Title: FISH PRODUCED BY NUCLEAR TRANSFER FROM CULTURED CELLS

(57) Abstract: The disclosure provided herein teaches that fertile transgenic fish can be generated by nuclear transfer using cultured cells such as embryonic fibroblasts.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/18393

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : C12N 15/00; A01K 67/027
US CL : 800/20,24

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
U.S. : 800/20,24

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X,T,P	LEE, K.-Y. et al. Cloned zebrafish by nuclear transfer from long-term-cultured cells. Nature Biotech. August 2002, Vol. 20, pages 795-799, specifically, page 799.	1,2,4,5-7,9,10,
Y	ZHAO, H-B. et al. Nuclear transplantation of somatic cells of transgenic red carp. Acta Genetics Sinica. May 2002, Vol. 29, pages 406-412, entire document.	1-4,9-14,16,17,20,21
Y	WAKAMATSU, Y. et al. Fertile and diploid nuclear transplants derived from embryonic cells of a small laboratory fish, medaka (<i>Oryzias latipes</i>). PNAS. 30 January 2001, Vol. 98, No. 3, pages 1071-1076, specifically, Materials and methods, pages 1071-1072; page 1073, col. 1, paragraph 3.	1-5,9-14,16,17,20,21
X	LIU, T.-M. et al. Studies on factors affecting the development of embryos from somatic cell nuclear transplantation in the fish. Zoological Research. April 2002, Vol. 23, No. 2, pages 107-112; Abstract.	11,12,20,21
---		-----
Y	SCHNIEKE, A.E. et al. Human Factor IX transgenic sheep produced by transfer of nuclei from transfected fetal fibroblasts. Science. 19 December 1997, Vol. 278, pages 2130-2133, specifically, page 2130, column 2, paragraph 1.	1-4,9,10,13,14,16,17
Y		1-5,9-14,16,17,20,21



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"B" earlier application or patent published on or after the international filing date	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&"	document member of the same patent family
"O" document referring to an oral disclosure, use, exhibition or other means		
"P" document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search

22 October 2003 (22.10.2003)

Date of mailing of the international search report

05 DEC 2003

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Faxsimile No. (703)305-3230

Authorized officer

Valerie Berbiglio

Telephone No. 703-308-1234

INTERNATIONAL SEARCH REPORT

C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X,P -- Y,P	LIU, T.M. et al. Factors affecting the efficiency of somatic cell nuclear transplantation in the fish embryo. Journal of Experimental Zoology. December 2002, pages 719-725, specifically, page 720, paragraph bridging columns 1 and 2; page 720, col. 2, lines 28-33.	11,12,20,21 ----- -4,9,10,13,14,16,17
A	DI BERARDINO, M.A. Animal cloning-the route to new genomics in agriculture and medicine. Differentiation. 2001, Vol. 68, pages 67-83, specifically page 72 col. 1.	1-21